REMARKS

Status of Claims

Claims 1 – 26 were original in the application. Claims 1 – 13 and 23 – 25 have been withdrawn. Claim 14, 19 and 24 have been currently amended. Claims 14 – 22 and 26 are submitted for examination on the merits.

Rejection Pursuant to 35 USC 112

Claims 14 and 26 have been responsively amended.

Rejection Pursuant to 35 USC 103

Claims 14 - 18, 21, and 26 were rejected as being unpatentable over Dion U.S. Patent No. 5,913,867.

The Examiner contended that Dion discloses the invention substantially as claimed including a method of oscillating a high speed surgical burr (18) including the steps of providing a motive source (114), connecting the source with a drive shaft to the burr (col. 3, lines 48-51), oscillating the burr at a rate to cut bone (col. 4, lines 1-3; col. 7, lines 32-33) and oscillating over only a portion of a full circle (see page 14 of Applicants remarks from August 13, 2007; col. 7, line 24)), providing a burr that is unshielded (see Fig. 1-2 and 4), cooling and clearing the burr by fluid irrigation and fluid (col. 3, lines 28; col. 7, lines 11-16; ref. 118), and removing debris by suction (ref. 96; col. 3, lines 55-58).

The Examiner contended that although Dion discloses having an inner tube rotation rate of, for example, between 100 rpm and 5000 rpm, it would have been

obvious to have changed the motor to be able to produce higher rotation speeds, such as those set forth in the claim limitations. The Examiner contended that Dion also discloses that the surgeon controls the instrument speed. Therefore, the Examiner contended that since higher oscillatory rates will cut bone and not soft tissue, the surgeon can maintain high oscillatory speeds to do so.

Claim 14 was previously amended to require oscillating the burr **over only a portion of a full circle** so that the burr cuts or abrades bone or hard matter, while leaving softer tissues substantially or entirely undamaged. The Office Action does not address the limitation that the oscillations span less that 360°. It is not only the speed of the burr, but the fact that it does not rotate a full circle that prevents the softer tissue from being grabbed and cut or abraded by the burr.

Claims 13 – 21 depend directly or indirectly from claim 14 and allowable therewith and for the further grounds set out in them.

Similarly, claim 26 requires oscillating the burr **over a majority portion of a full circle** so that the burr cuts or abrades bone or hard matter, while leaving softer tissues substantially or entirely undamaged with a burr which is unshielded and fully exposed in the operational theater. A portion of a full revolution which is more than 50%, but less than 100% of a revolution is nevertheless a portion or less than 360°.

Col. 7, line 24, of Dion which was cited against this feature does not in any sense disclose or refer to a step of oscillating the burr less that 360° over only a portion of a full circle. Dion only states that the physician can control the direction of oscillation. Since the minimum rpm disclosed is 100rpm, this would require the physician to repetitively turn the directional control faster than 100 times per minute to meet the

claim. Such a methodology is not disclosed in Dion and it is impractical to assume that any human being could or practically would repetitively turn the directional control this fast for any period of time other than a very short interval. To assume as much constitutes a wholesale hindsight and fantastical reading of the claim into Dion and an unnatural or counter intuitive extension therefrom.

The Examiner also cited page 14 of Applicants remarks from August 13, 2007 as a basis for rejection partial rotational cycles. However, this section of the remarks of the prior amendment contains no statements that bear on that limitation. What was discussed was paragraph [0015] of Wulfman where are reversible drive was disclosed for a variable diameter burr. This portion of Wulfman did not disclose or relate in any manner to a drive through partial rotations nor for that matter even to an oscillating drive of any sort. It is not clear what the Examiner's intent was in citing to this section of the Applicant's remarks.

Claims 19 and 21-22 were rejected as being obvious over Dion as applied to claims 14 and 20 above, and further in view of Wulfman et al. U.S. Patent No. 2002/0007190.

The Examiner contended that Dion discloses the invention substantially as claimed except for a slip clutch and a telescoping drive shaft and driving shaft. The Examiner contended that Wulfman teaches a resiliently biased slip clutch for the purpose of coupling the drive shaft assembly to the burr by (see Fig. 3) and having an overlapping portion of a drive shaft and driven shaft that are telescopically over each other (see Fig. 3) for the purpose of moving the burr. Therefore, it would have been

obvious to one having ordinary skill in the art at the time of the invention to have modified Dion with a slip clutch in order to hold the drive shaft assembly onto the burr and to have modified Dion with and overlapping portion of a drive shaft and driven shaft that are telescopically over each other in order to oscillate the burr to cut bone.

The Applicant respectfully disagrees that the clutch of Fig. 3 of Wulfman is a slip clutch, particularly when the two clutch halves 524 and 532 each have engaging anti-slip cogs 530 that will lock the rotation of shaft to the other. In addition, the halves 524 and 532 are fixed to each other with a magnetic coupler 528. Thus, in most instances there is no slippage as long as the strength of the magnetic coupling is not overcome and even then any slip is limited by cogs 530. The overall device is not characterized by Wulfman as a slip clutch, but as a magnetic coupler 522.

Nevertheless, what claims 19, 21 and 22 are directed to is the method of rotation-to-oscillation conversion using the spring-biased slip clutch of Fig. 3 which converts rotary motion into reciprocating or oscillatory motion. No similar action is seen in Wulfman or Dion. Paragraph [080] of Wulfman states; "In operation, rotational movement is imparted to drive train 516 by any conventional drive system, whereby rotational movement is transferred to drive shaft connector 524 by engaging complementary anti-slip cogs 530 on each connector." There is a straight rotational through coupling performed in Fig. 3 of Wulfman. Therefore, Fig. 3 of Wulfman and its disclosure cannot be cited to support a different action, namely a rotation-to-oscillation conversion.

Applicant respectfully requests advancement of the claims to allowance.

Respectfully submitted,

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